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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/621,072	07/16/2003	Mark S. Moir	004-8428	1240

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EXAMINER	
FLOURNOY, HORACE L	
ART UNIT	**PAPER NUMBER**
2189	

DATE MAILED: 12/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/621,072	MOIR ET AL.	
	Examiner	Art Unit	
	Horace L. Flournoy	2189	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *amendment received on 9/25/2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24, 44-68* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *44-68* is/are allowed.

6)☒ Claim(s) *1-6, 15, 24* is/are rejected.

7)☒ Claim(s) *7-14 and 16-23* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

This Office action has been issued in response to amendment filed September 25th 2006. Claims 1-24, and 44-68 are pending. Applicant's arguments have been carefully and respectfully considered, but they are not entirely persuasive, as will be discussed in more detail below, even in light of the instant amendments. Accordingly, this action has been made FINAL.

REJECTIONS BASED ON PRIOR ART

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-6, 15 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by **Bonola et al. (U.S. Patent Number 7,076,629 hereafter referred to as Bonola)**.

With respect to **independent claim 1,**

> *"~~An implementation of~~ A software transactional memory that allows concurrent non-blocking access to a dynamically sizable data structure* **[Bonola discloses**

in column 1, lines 21-23, "...a concurrent non-blocking heap memory management method that allows software to remove and return blocks of memory." Bonola teaches in column 1, lines 34-41 how "heap memory" is shared] ~~*defined*~~ *instantiated in shared storage managed thereby, the software transactional memory at least partially implemented as executable code* **["heap memory management method"]** *stored in a computer readable medium."* **[Bonola discloses this limitation, e.g. in column 8, lines 13-17]**

With respect to **claim 2,**

"The software transactional memory implementation of claim 1, wherein the shared storage is itself dynamically sizable." **[See FIG. 3, 60. The heap (shared storage) is dynamically sizable at the each calling routine (see column 5, lines 29-38).]**

With respect to **claims 3 and 15,**

"The software transactional memory implementation of claim 1, wherein at least some transactions that access state of the dynamically sizable data structure determine a sequence of transactional objects to access based, at least in part, on state of at least some of the transactional objects previously accessed during the same transaction." **[See FIG. 2B and column 5, lines 1-38]**

With respect to **claim 4,**

"The software transactional memory implementation of claim 1, further comprising: releasing, prior to termination of a particular one of the transactions,

at least some of the transactional objects previously accessed by the particular transaction." **[Bonola discloses in column 2, lines 35-38, "...removal of a heap memory block by a software stream preferably involves changing the value of a top pointer register, freeing the heap memory block previously listed in the top pointer register for use." Bonola teaches *releasing* (freeing), *prior to termination* (removal of a heap block) *of a particular one of the transactions, at least some of the transactional objects previously accessed by the particular transaction* (previously listed in the top pointer register for use)]**

With respect to **claim 5,**

"The software transactional memory implementation of claim 1, wherein individual threads of a multithreaded computation that access the dynamically sizable data structure are dynamically creatable and dynamically destroyable throughout the course of the multithreaded computation." **[disclosed, e.g. in column 1, lines 34-41.]**

With respect to **claim 6,**

"The software transactional memory implementation of claim 1, wherein at least some execution sequences open transactional objects during course of a transaction and release at least some of the opened transactional objects prior to termination of the transaction." **[Bonola discloses in column 2, lines 35-38, "...removal of a heap memory block by a software stream preferably**

involves changing the value of a top pointer register, freeing the heap memory block previously listed in the top pointer register for use."]

With respect to **claim 24,**

24. The software transactional memory implementation of claim 1, embodied as software that defines an application programming interface and which includes a functional encoding of operations concurrently executable by one or more processors to operate on state of transactional objects. **[disclosed, e.g. in column 1, lines 21-33]**

Allowable Subject Matter

Claims 7-14 and 16-23, are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 44-68 are hereby allowable over the prior art of record.

The following is an examiner's statement of reasons for allowance:

With respect to **independent claim 44,** the primary reason for allowance of in the instant application is the combination with the inclusion in these claims that ***"...and functional encodings of a open-type operation and a commit-type operation that employ respective instances of a single-target***

synchronization primitive to mediate concurrent, non-blocking access to the transactional object ...”

With respect to **independent claim 54,** the primary reason for allowance of in the instant application is the combination with the inclusion in these claims that ***“...wherein the open-type operation and a commit-type operation employ respective instances of a single-target synchronization primitive to mediate concurrent, non-blocking access to respective transactional objects that encapsulate individual ones of the logical blocks...”***

With respect to **independent claim 65**, the primary reason for allowance of in the instant application is the combination with the inclusion in these claims that ***“...the coordinating means employing respective instances of a single-target synchronization primitive to mediate concurrent, non-blocking open-type and commit-type operations on respective transactional objects that encapsulate individual ones of the logical blocks...”***

With respect to **independent claim 68**, the primary reason for allowance of in the instant application is the combination with the inclusion in these claims that ***“...for a transaction that desires write accesses to contents of a particular one fo the logical blocks, aborting another active transaction, if any, that has read or write access to the particular logical block.”***

ARGUMENTS CONCERNING PRIOR REJECTIONS

The examiner agrees with the applicants remarks with regard to the 35 USC 101, 112 1st, and 112 2nd rejections in the last Office Action. Each of those rejections are hereby withdrawn.

CONCLUSION

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Direction of Future Correspondences

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Horace L. Flournoy whose telephone number is (571) 272-2705. The examiner can normally be reached on Monday through Friday 8:00 AM to 5:30 PM (ET).

Important Note

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Reginald G. Bragdon can be reached on (571) 272-4204. The fax phone numbers for the organization where this application or proceeding is assigned is (703) 746-7239.

Information regarding the status of an Application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or PUBLIC PAIR. Status information for unpublished applications is available through Private Pair only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2100.

Horace L. Flournoy

Patent Examiner
Art unit: 2189

Reginald G. Bragdon

Supervisory Patent Examiner
Technology Center 2100